indefatigable astronomer will soon be directed to the publication of another great work undertaken by him at the Argentine National Observatory, viz. the Cordoba General Catalogue of Stars.

UNIVERSITY AND EDUCATIONAL INTELLIGENCE

OXFORD.—The commencement of the Michaelmas Term has been marked this year by an event of happy augury for the advancement of science in Oxford. Prof. Burdon-Sanderson opened the physiological department in the University Museum with an inaugural address, in which the aims and scope of physiology were defined with scientific accuracy and singular literary charm. The Professor showed the great importance of physiological methods for the advance of pathology, and ended by promising his future students something more interesting to study than "dry bones."

Prof. Sanderson gives a regular course of lectures on the "Mechanical Functions of the Animal Body," and the physiological laboratory is open for practical instruction under the Professor and two assistants.

Mr. Yule also has a class at Magdalen for Practical Physiology.

In the Department of Animal Morphology Prof. Moseley lectures on Comparative Anatomy, each lecture being followed by practical instruction. Mr. W. H. Jackson lectures on Mimicry and Parasitism; Mr. E. B. Poulton on the Fundamental Tissues, and Mr. W. L. Morgan on the Limbs of Vertebrata.

Mr. E. Chapman has a class at Magdalen for the study of Vegetable Histology.

In the Physical Department Prof. Clifton lectures on the Properties and Means of Measuring Electric Currents; practical instruction in Physics is given by Prof. Clifton and Messrs. Heaton and J. Walker. Mr. Heaton gives a course of lectures on Mechanics.

At Christ Church Mr. Baynes has a class for practical instruction in magnetic and electrical measurements. At Balliol Mr. Dixon gives an elementary course of lectures on Electricity and Magnetism.

In the Chemical Department Prof. Odling lectures on the "Naphthalene Family." Lectures on Inorganic and Organic Chemistry are given by Mr. Fisher and by Dr. Watts. Practical instruction is given by Mr. Fisher, Dr. Watts, and Mr. Baker. At Christ Church Mr. Vernon Harcourt forms a class for "Examples in Quantitative Analysis."

Prof. Prestwich lectures on the "Elements of Geology." Prof. Story-Maskelyne lectures on "Crystallography."

The Natural Science Scholarship at Exeter College has been awarded after examination to Mr. E. H. Cartwright, of Charterhouse School.

Natural Science Scholarships are offered for competition this term by Christ Church and Balliol Colleges.

CAMBRIDGE.—The outgoing Senior Proctor, Mr. Torry, in his address on laying down office, referred to the present system of granting M.A. degrees without examination, and suggested that all who had not already taken honours should be required to pass for M.A. in some specified portion of one of the honours examinations.

Prof. Darwin will lecture this term on gravitation, and consider some of the mathematical problems which arise in the theory of the figure of the earth, measurements of base lines and arcs of meridian, pendulum experiments, the Cavendish experiment, and cognate subjects.

The Demonstrator of Mechanism will take a class in rigid dynamics, with a view to its applications in engineering; and also a preparatory class in the differential calculus.

At the annual election to Fellowships at Trinity College, Mr. R. A. Herman, Senior Wrangler and First Smith's Prizeman in 1882, was elected a Fellow. Mr. W. R. Sorley was elected to the Fellowship given for mental and moral science.

The election to the Knightbridge Professorship of Moral Philosophy will take place on November 1. The electors are Professors Caird, Fowler, Hort, and Seeley, Drs. Campion and Todhunter, Mr. Leslie Stephen, Mr. Venn, and the Vice Chancellor.

Prof. Cayley lectures this term on higher algebra and the theory of numbers.

The Demonstrator of Comparative Anatomy is conducting an advanced class on the Protozoa and Cœlenterata.

Messrs. A. J. C. Allen (Peterhouse), and C. Graham (Caius), have been appointed moderators for the year beginning in May next.

Prof. Garnett, Dr. Vines, and Mr. Pattison Muir are appointed examiners for the first M.B. examinations; Prof. Milnes Marshall, Dr. Gaskell, and Dr. Shuter for the second M.B. examinations of the current year.

Mr. Stearn is lecturing on electrostatics at King's College, with special reference to theories of electric displacement, specific inductive capacity, and the strain in a dielectric.

SCIENTIFIC SERIALS

Bulletins de la Société d'Anthropologie de Paris, tome 6, série 3, 1883.—In a discussion on polyandry in Cashmere and Thibet, M. Olivier Beauregard maintained that this practice prevailed among the early Aryan races of Hindostan 2000 years before the Christian era, as shown in the first book of the Mahâbhârata, from which he made several interesting extracts bearing on this point. His views were strongly contested by M. Ujfalvy.—"Remarks on the character of the crania of native South Australians," by M. Cauvin, who made a series of anthropometric determinations while engaged at Sydney in prosecuting his researches into the morphological characteristics of the Oceanic races.—M. de Ujfalvy, in a communication on the "Traces of the Ancient Cults of Central Asia," described the various superstitions which point to an earlier Vedic faith, and to a fire-worship among races who now adhere either to Hindooism, or Islamism, while in the heart of Central Asia the majority of the tribes are still followers of the "Old Man of the Mountains," or the belief of the "Assassins." He believes that the introduction of *Mazdeism* and Brahmanism was probably contemporaneous, and that these ancient cults were preceded by a form of Shamanism in which the products of nature were worshipped.—On human sacrifices among the Khonds of India, by M. E. Reclus. The author regards these so-called *mériahs* as a survival of an early practice of the ancient agricultural tribes of Asia, who believed that blood was necessary to the fertility and nutritive qualities of the fruits of the earth.—On the population of Western Laos, by M. Carl Bock. This memoir is remarkable for its minute ethnographic details and for the number of its anthropometric determinations, and treats of the political and social relations of the six Laotian States which pay tribute to Siam.—A discussion on the supposed practice of the "*Couvade* among the Basques," in which M. Vinson, who has been twelve years resident among the people, denies the existence among them of any such custom, and gives his reasons for doubting the assumed affinity of this people with the Iberians. M. E. Reclus thinks the existence of such a practice might perhaps be connected with the transition from the metronymic to the patronymic principle of family government; and that from an ethnological point of view the question of its reality, to which many of the best known classical authors have given their testimony, is worthy of attention.—On the prehistoric lasso, by M. Chauvet.—Report, by M. Nicaise, on the discovery of human bones, associated with Quaternary animal remains and worked flints, in the alluvial deposits of the Marne Valley near Chalons, with plan of locality, &c.—On the significance of the principal humeral of the biceps, by M. Leo Testut, with special reference to the contradictory opinions of Hyrtl and Calori.—Report on the brain of Louis Asseline, by MM. Duval Chudzinski and Hervé, with diagrams of various aspects of the hemispheres. M. Duval's assertion that Asseline's brain presented various simian characters drew forth M. Foley's strongly expressed reprobation, while M. Dally considers that the more general admission of a close anatomical affinity between man and the lower animals would be conducive towards morality, by lessening the cruelties wantonly inflicted on the latter.—Report of commission for the preservation of megalithic monuments, on the remains of dolmens of Port Blanc (Quiberon).—On a prehistoric case of dental abnormality, by Dr. Bernard.—Report on the adjudication of the Prix-Godard for 1883, by M. L. Rousselet, who passed in review the several labours of M. Chantre, to whom the prize has been awarded in consideration of the merits of his palæolithic atlas of France, and for his work on the Iron Age, while M. Prengrueber receives a silver medal, with honourable mention, for his anthropometric measurements of the Kabyles.—On dental erosions in the dog, by M. Capitan.—On the steatopyga of the Boshman women, by Dr. Blanchard.

Journal de Physique théorique et appliquée, September, 1883.—On the critical point of liquefiable gases, by J. Jamin.—On the compressibility and the liquefaction of gases, by J. Jamin.—

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Note on the coloured fringes in films of uniaxial crystals, and on their projection in monochromatic light, by A. Bertin.—Optical apparatus for verifying plane surfaces, whether parallel, perpendicular, or oblique, by Léon Laurent (with diagrams).—Theorem relative to ramified linear currents, by L. Thévenin.—Horizontal capillary electrometer, by Ch. Claverie.—Sonorous vibrations of solids in presence of liquids, by F. Auerbach.—A measurement of wave-length in the ultra-red of the solar spectrum, by E. Pringsheim.—Researches on the proportion of carbonic acid in the air, by J. Reiset.—Researches on the proportion of carbonic acid contained in the air, by A. Müntz and E. Aubin.—On the normal amount of carbonic acid in the air, by M. Dumas.—Experimental researches on the thermal conductivity of minerals and rocks, by J. Thoulet.—Analytical researches on the method of J. Thoulet relative to thermal conductivity, by A. Lagarde.—On the diffusion of an impalpable powder in solid bodies, and On pig iron transformed to steel by cementation, by Sydney Marsden.—On the electrolysis of hydrogen peroxide, by M. Berthelot.—Detection of hæmoglobin in the blood by optical methods, by E. Branly.—Measurement of the rotation of the plane of polarisation due to the magnetic influence of the earth, by H. Becquerel.—A new apparatus for determining specific heats, by W. Louguinine.—Reversal of line spectra of metals, by Liveing and Dewar.—Boiling points and vapour tensions of mercury, sulphur, and some complex carbon compounds determined by the hydrogen thermometer, by J. M. Crafts.

Atti of the Royal Academy dei Lincei, June 3.—Obituary notice of the late Rainardo Dozy, with a complete list of the illustrious *savant's* writings, by Sig. Amari.—Remarks on Giunti's researches on the influence exercised by some physical agencies on alcoholic fermentation, by Sig. Cossa.—On the rotatory power of the isomerous photosantonic acid $C_{15}H_{20}O_4$, by Sig. Nasini.—Two important results of Hall's electric phenomenon, by Sig. Blaserna.—On the spontaneous oxidation of mercury, by S. Damiano Macaluso.—On the equilibrium of elastic and rigid surfaces, by S. Giacinto Morera.—On a new method of anæsthesis, obtained by disassociating the motor and sensitive functions of the nervous system, by S. A. Moriggia.

SOCIETIES AND ACADEMIES

PARIS

Academy of Sciences, October 8.—M. Blanchard, president, in the chair.—On the force of explosive substances, by M. Berthelot. In reference to the work in two volumes just published by him on this subject ("Sur la Force des Matières explosives d'après la Thermo-chimie, Gauthier-Villars, 1883), the author explains that the theory there advanced is the result of thirteen years' experimental researches reported from time to time in the *Comptes Rendus* of the Academy. The first part is devoted to general notions, and in particular to the development of his theory on the propagation of explosive phenomena and on the explosive wave, the discovery of which throws quite a new light on the whole subject. In the second part are recorded the various experiments and researches made by the author on the electric fixity of nitrogen. In the third part the principles and numerical data thus determined are applied to define in particular the force of detonating gases, nitro-glycerine, nitromannite, dynamite, gun-cotton, picrates, and other powerful explosive substances. The history of the origin of gunpowder and other explosives is consigned to an appendix, and the work is enriched with full analytical tables and alphabetical indexes.—Report on the earthquake felt at Ischia on July 28, 1883, with remarks on the probable causes of seismic disturbances, by M. Daubree. The author rejects Prof. Palmieri's view that the catastrophe was connected with the presence of old quarries and other cavities whose supports gave way and thus caused a sudden subsidence of the ground at Casamicciola. He holds, on the contrary, that it was due to the volcanic forces, by which the island has often been wasted, and notably in the years 1828, 1867, and 1881. On the general question of the nature and cause of these disturbance he holds with Dolomieu that they must be regarded as suppressed volcanic eruptions. Gaseous bodies formed in underground cavities, the vapour of water penetrating from the upper crust, subjected to great pressure, sufficiently superheated, and set in motion from time to time by a simple natural process, suffice to account for all the essential phenomena associated with earthquakes.—Reply to a note by M. Thollon on the interpretation of a phenomenon of the solar spectrum, by M. Faye. The author appeals to data supplied by Secchi and others in support of his views, and against the reality of the velocity of 100 to 150 leagues per second usually assigned by spectroscopists to the movements of the hydrogen in the solar protuberances.—On the measurement of the forces brought into play in the various acts of locomotion (one illustration), by M. Marey.—On the coexistence in a specimen of guano of effervescent carbonate of ammonium with water and sulphate of potash, by M. E. Chevreul.—On the symmetrical character of the so-called adventive roots in plants, by M. D. Clos.—After the reading of this paper allusion was made by the President to the loss sustained by the Academy in the person of Dr. Oswald Heer, Corresponding Member of the Botanical Section, who died at Lausanne on September 27.—On the financial aspect of the great works of irrigation in France and the north of Italy, by M. Ar. Dumont.—Observations on the Pons-Brooks comet and the planets 142, 185, 221, and 234 made at the Paris Observatory (equatorial of the West Tower), with note on the remarkable variation in brightness of the Pons-Brooks comet, by M. G. Bigourdan.—On a remarkable peculiarity presented by the tail of the great southern comet of 1882, by M. L. Cruls.—On the approximate evaluation of integers, by M. Stieltjes.—On the induction produced by the variation of intensity of the electric current in a spherical solenoid, by M. Quet.—On the products formed in the fermentation of the sugar-cane due to the properties of the soil, by MM. Dehérain and Maquenne.—On the wheats of India, by M. Balland. The specimens of Indian wheaten flour examined by the author revealed the presence of about 3 per cent. of *Vicia peregrina, Cicer arietinum*, and other leguminous flours.—On poisoning by the bacilli of the jequirity (one illustration), by MM. Cornil and Berlioz.—On the influence of beet-pulp on the milk of the cow, by MM. Andouard and V. Dézaunay. From their experiments the authors conclude that the milk of cows fed on beet-pulp increases in quantity, but deteriorates in quality.—On the geological age of the serpentine rocks and ophiolithic formations of Corsica, by M. Dieulafait.

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